Technology for Alaskan Transportation

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University of Alaska Fairbanks
Transportation Technology Transfer Program

Planning for Winter Snows

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Snow and ice control is often the single most expensive item in the maintenance budget for streets and highways. In a recent year, snow removal in 33 snow-belt states accounted for 16.2 percent of total maintenance costs and 3.6 percent of all highway expenditures.

Because of its high cost and impact on public safety and mobility, snow and ice control deserves special attention from top highway management, as well as from those in all levels of maintenance. Thus, an effective winter snow-control program requires year-round work and planning. Among the keys to wintertime success are route planning, personnel training and assistance from private contractors.

Route Planning

When planning snow removal routes, priority plans should be established for sanding or plowing. This prioritization should not only include the locations or routes that are to be covered first, but also the repeat time spans for sanding or plowing, and other factors such as traffic volumes (data may be available from DOT&PF on a particular road) and road geometries (such as corners or steep hills)

While establishing snow routes may not be necessary in small or rural communities, they are essential in the more populated areas with considerable traffic. When plowing routes, drivers can save time by avoiding unnecessary trips for sand and by coordinating the lengths of routes with the daily schedules of crewmembers.

Trial runs should be made in the fall before the first snowfall. During trial runs, identify drains and waterways that must be opened. Other structures that will be hidden from the plow (including fire hydrants, guide rails, drop inlets, catch basins and curbing ends) should also be pinpointed.

During snow emergencies, enforcement of snow-route criteria is vital in order to keep main routes open and traffic moving. No matter what the weather, routes for fire and other emergency vehicles should be kept plowed at all times. Enforcement of snow route regulations often includes ticket-

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How Safe Are Older Drivers?

Even though Alaska has a relatively young population, the pool of Alaskan motorists is aging. This is a national trend. By the year 2,000, one of every three American drivers will be older than 55.

Most people believe that older drivers are accident-prone and constitute a hazard on American roads. Recent studies at the University of Kansas Transportation Center and Columbia University have focused on this issue. Research by Sami Barakat and Tom Mulinazzi in Kansas examined the safety record of elderly drivers, and James Malfetti and Darlene Winter at Columbia developed a new self-rating system to help older drivers

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This newsletter is funded by a grant from the Federal Highway Administration

Older Drivers

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assess and improve their driving skills.

What is the Record?

The Kansas study confirmed that physical abilities do decrease with age. The reaction time of all five senses slows, and decision making skills decrease. As people age, they tend to lose their ability to adapt to glare and darkness. The elderly are also more likely to improperly use prescription and over-the-counter drugs. In spite of this, the Kansas study found that elderly drivers tend to be more self-limiting in adverse conditions and more law-abiding in general.

The net result is that the number of fatal accidents does increase with age, but not as fast as their increase in the total population. The number of fatal accidents involving older people is greater than those of middle age, but less than any other population group.

The authors stressed the need for more detailed research since recent studies tended to focus only on fatal accidents, not on accidents as a whole. To reduce the frequency and severity of accidents, much more information must be collected—including data on the number of people, data by individual age groups, sex, time of day, type of roadway system and type of vehicle, in addition to the number of miles being driven. Their report, entitled *Elderly Drivers: Problems and Needs for Research* by Sami Barakat and Tom Mulinazzi, is available from the Transportation Technology Transfer Program, University of Alaska Fairbanks, Fairbanks, Alaska 99775-0660.

Self-rating System

A new self-rating system has been developed to help older drivers assess and improve their driving skills. James Malfetti and Darlene Winter developed the test at Columbia University with funding from the AAA Foundation for Traffic Safety. The test is in the form of a questionnaire, which was field-tested with 600 older drivers.

The test booklet includes a test form of 15 questions, a self-scoring system, and suggestions for sharpening driving techniques. The questions deal with changing lanes, using seat belts, awareness of new traffic regulations, driving through intersections, merging into interstate traffic, reaction time, the effects of emotions on driving and other issues.

Low scorers are encouraged to take appropriate steps to ensure the safety of themselves and others. While age is not the sole measurement of driving ability, vision and reaction time do change as people age. This manual helps older drivers recognize and cope with these changes. A number of state and federal agencies, medical groups and professional societies are promoting this test. The American Journal of Ophthalmology said the booklet should be "read by every driver over the age of 55."

The manual, entitled *Drivers 55 Plus: Test Your Own Performance*, is available for $2.00 from local AAA clubs or from the AAA Foundation for Traffic Safety, 2990 Telestar Court, Suite 100, Falls Church, VA 22042.

News & Views

Help!

We at the Transportation Technology Transfer Program have been writing all of the articles since this newsletter began several years ago. But you, the readers, are encouraged to contribute as well. We don't know it all.

We'd like this newsletter to be a forum where Alaskans, particularly state and local agencies, can exchange practical ideas. We would especially like to hear about Alaskan experiences and novel methods that work well in Alaska. If you don't have time to write an article, or even a short piece for News and Views, feel free to send us a rough draft and we'll polish it up for you. Don't be shy. We need your experience and expertise.

Hazardous Waste Hotline

Easy access to information is critical when dealing with hazardous waste spills. To help state and local officials deal with transportation accidents involving hazardous materials, the U.S. Department of Transportation and the Federal Emergency Management Agency (FEMA) have developed an emergency clearinghouse for information about hazardous materials.

The clearinghouse will provide access to the HAZMAT Information Exchange System via telephone and computer systems. The clearinghouse will offer updated information about training, planning techniques, events and conferences, management services, and other helpful information to communities that must deal with response programs.

The DOT toll-free telephone line is **1-800-PLAN FOR** (1-800-752-6367). FEMA's 24-hour computerized service is accessible to persons having personal computers with modems by dialing (312) 972-3275.

Build a Beaver Baffler

Beavers abound in Alaska, and the little rascals are well known for building dams to create their own swimming holes. Enterprising (or lazy, depending on your point of view) beavers sometimes build a small dam across a road culvert to create their pond, saving a lot of work for themselves and creating a lot of work for road crews.

Beavers are both industrious and tenacious. Tear down a dam one day, and the beaver will rebuild it the next. The only effective solution has been to trap and kill the beaver. Now there is another option.

The solution comes from an article by Danna Ingram published in the *Oregon Roads Newsletter*. He describes an easy, fail-safe method to foil the beavers without harming them. Just place a 3 x 3 foot white flag, fastened at the top between two poles, any place you see a beaver beginning to build a damn or any place a dam was removed. Both the color and motion of the flag seem to be important. The beaver will leave and never come back. You, too, can build a better beaver baffler, unburdened by a big buck or a beaver-bashing solution, that will banish the baneful beaver to a new boreal backwater.

Drunk Drivers

In Finland, England and Sweden, convicted drunk drivers are automatically jailed for approximately one year. The names of convicted drunk drivers in Australia are published in local newspapers. In South Africa, chronic offenders face a maximum penalty

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Planning for Snows
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ing and towing violators' vehicles away.

Training

Training snow-removal personnel not only ensures that workers will perform their jobs more effectively, but it also instructs the employees in the proper use of the equipment. New operators should be trained and tested for their manual abilities and understanding of plowing procedures, routes to be plowed, and sequence of plowing priorities. Likewise, the seasoned operators should be periodically trained and annually informed of changes in procedures. The operators need to be trained to be sure that they are not hazardous to the traveling public or to themselves.

Before winter storms strike, fall meetings should be held to familiarize road crews with their winter duties and all routes in case someone becomes ill and another crew member must take over the route. In addition, the previously mentioned route trial runs should be made.

Using Private Contractors

Because it is not feasible or cost effective for a governmental entity to increase its personnel, buy extra equipment, and stockpile enough materials for a major snowstorm that may not hit for several decades, local contractors should be used when severe winter weather strikes. Contracts should be negotiated with contractors prior to the start of the season and should provide for timely response by the contractors once they are notified.

Although not a total panacea to the difficulties encountered in snow and ice control, these planning guidelines should cushion the blow of severe winter weather.

We bring these prewinter thoughts to you with thanks and a tip of the hat to the *KUTC Newsletter; Roads, Bridges, and Transit Technology News; The Wheel* and *The Snowfighter's Handbook.*

Equipment Supply and Maintenance A Must for Staying Abreast of Snow Removal

Even a well-trained, prepared snow-removal crew cannot successfully combat the consequence of a severe winter storm without functioning and proper snow-removal equipment. Prewinter preparation of equipment and stockpiling supplies alleviate many of the headaches that accompany heavy snowfall. Agencies responsible for snow removal may also want to develop a contingency plan for hiring or contracting for emergency services such as snow plows, dump trucks to haul snow, front-end loaders, or whatever is appropriate.

First, all equipment should be inspected well in advance of the first storm. If repairs are necessary, they should be completed as quickly as possible. For example, sanders should be calibrated, mounted, tested and loaded in advance of their need. Delaying this procedure drastically increases the chances for equipment to "unexpectedly" not function properly.

Furthermore, all equipment parts and supplies should be inventoried and ordered in the fall so they will be on hand when needed, because it is difficult to obtain parts with a blizzard in progress. Regardless of the cost, departments should seriously consider purchasing those parts that typically break during a snowstorm, and the parts should be stored where they are accessible during a storm. Something as simple as a tire chain has kept loaders and graders in the shops for critical hours. In addition, adequate amounts of abrasives and chemicals should be kept on hand. By the beginning of winter, a department should have stockpiled one-half to three-fourths of the estimated amount of deicing material needed for winter.

Once the storms have hit, preventive equipment inspection and maintenance should be practiced. After returning to the garage, all trucks should be inspected, especially their wipers, lights, oil, antifreeze, blades and hydraulic systems. At the same time, trucks should be loaded and fueled so they are ready to use at the next sign of snow. Preventive maintenance of equipment should be performed throughout the winter months after every 100 hours of service. This will add years to the life of the equipment and keep downtime to a minimum.

Well-kept machinery will enhance an agency's ability to achieve the snow-removal quality that local citizens expect.

These suggestions come courtesy of the *Roads, Bridges, and Transit Technology News*, the *KUTC Newsletter* and *The Wheel.*

Technology for Alaskan Transportation is a quarterly newsletter that informs local transportation people in government and industry of useful publications and services. The newsletter reports on practical information, new technology, and learning opportunities such as workshops, seminars and video tapes. To get on our mailing list, to receive any of our services, or to contribute to the newsletter, contact:

Administrative Assistant
Transportation Technology Transfer Program
Room 235 Duckering Building
University of Alaska Fairbanks
Fairbanks, Alaska 99775-0660
(907) 474-7733

About Our Program

The goal of the Transportation Technology Transfer Program is to help local agencies obtain useful information and training related to local transportation needs. The program focuses on technology related to roads, bridges and public transportation. In addition to our newsletter, we provide low-cost seminars and workshops, provide copies of useful technical reports upon request, and answer phone and mail inquiries related to transportation technology. If we don't have the answer, we will refer the question to a suitable specialist.

The Transportation Technology Transfer Program is administered by the Alaska Department of Transportation and Public Facilities, with principal support provided by the Transportation Research Center at the Institute of Northern Engineering on the campus of the University of Alaska Fairbanks. This program is funded by the Federal Highway Administration, the University of Alaska Fairbanks (UAF), and the Alaska Department of Transportation and Public Facilities (DOT&PF).

The following people from DOT&PF and UAF are involved in the program.

DOT&PF Personnel

John D. Martin, P.E.
Director, Transportation Technology Transfer Program
(907) 451-5150

Michael Travis
Research Engineer
(907) 474-2482

UAF Personnel

Dr. Jan Botha
Director, Transportation Research Center
(907) 474-7733

George (Bub) Mueller
Project Associate
(907) 474-7733

Deborah Bennett
Administrative Assistant
(907) 474-7733

Alan C. Paulson
Editor, *Technology for Alaskan Transportation*
(907) 474-6116

James Ludington, Tom Kruse
Student Assistants

Calendar of Events

We will be happy to include any relevant event you would like to publicize. Call the editor at (907) 474-6116. For more information about events in Alaska, call Michael D. Travis at (907) 474-2482 or Dr. Jan Botha at (907) 474-7497.

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October 14-15—Construction Contracting Fundamentals for Minority Contractors. Call Dr. Larry Bennett at (907) 474-5094.

October 21-22—Construction Contracting Fundamentals for Minority Contractors. Call Dr. Larry Bennett at (907) 474-5094.

October—Course 103, Interpreting Engineering Drawings. Fairbanks. Sponsored by the Arctic Trails Chapter 71, International Right of Way Association.

October—Course 104, Property Descriptions. Fairbanks. Sponsored by the Arctic Trails Chapter 71, International Right of Way Association.

November 13-17—Steel Structures Painting Council, 1988 National Conference and Exposition. Baltimore, MD. Call Rose Mary Surgent at (412) 268-3405.

November—Site Traffic Impact Analysis. Anchorage.

November 21-22—Traffic Accident Analysis and Reconstruction. Washington, D.C. Sponsored by the Continuing Engineering Education Program at George Washington University. Call (202) 994-6106.

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January 22-26—68th Annual Meeting of the Transportation Research Board. Washington, DC. Call Marshall Thompson at (217) 333-3930.

February 6-8—International Conference on Applications of Advanced Technologies in Transportation Engineering. San Diego, CA. Contact K.C. Sinha at (317) 494-2211.

February 26-March 3—Traffic Control Methods. Santa Barbara, CA. Sponsored by the Engineering Foundation. Call (212) 705-7835.

May—Course 201, Communications in Real Estate Acquisitions. Fairbanks. Sponsored by the Arctic Trails Chapter 71, International Right of Way Association.

May—Course 213, Conflict Management. Fairbanks. Sponsored by the Arctic Trails Chapter 71, International Right of Way Association.

Drunk Driving

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of a ten-year prison sentence, a fine of $10,000, or both. In Turkey, drunk drivers are taken 20 miles from town and forced to walk back under escort. A second conviction of drunk driving in Bulgaria is punished by execution.

Update on Lawsuit Resources

In the last issue of our newsletter, we talked about three books that are required reading if you find yourself facing lawyers and the courts. Here is updated ordering information.

Killer Roads: From Crash to Verdict is available from The Michie Company, P.O. Box 7587, Charlottesville, VA 22906. If you send a check, the price is $65 postpaid. If you have them bill you, the price is $70 postpaid.

Ten Commandments (More or Less) For the Expert Witness is available for $8.70 postpaid from Better Roads magazine, P.O. Box 558, Park Ridge, IL 60068.

The Deposition Guide has been updated and is now called **Johnson's Guide for Witnesses.** It is available for $7.95 plus $2.50 postage from Law Forum Press, 2318 Second Avenue, Seattle, WA 98121.

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University of Alaska Fairbanks
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